Adapt-N Infrastructure

High Resolution Weather Data

Computer Model
simulates soil and crop processes on Cornell University server

Stakeholder

Nitrogen recommendations & simulation results
Information on field and management

Adapt-N
An online tool for precise nitrogen management in corn production accounting for weather.

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http://adapt-n.cals.cornell.edu
**Adapt-N Features and Benefits**

- Predict corn N needs more precisely based on field-specific conditions.
- Reduce fertilizer rates, costs and losses in the long-term, while maintaining yield.
- Estimate excess and losses of N.
- Run retrospective and “what if …?” analyses.
- Obtain additional information on N mineralization, losses, weather impacts, growth stage, soil water, etc.
- Receive daily alerts via text or email.
- Accessible from anywhere with internet, including mobile devices (iPads, smartphones, etc.).

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**What is Adapt-N?**

Adapt-N is an online tool that helps precisely manage N inputs for grain, silage or sweet corn. It can be accessed by computer or mobile devices, and can provide automatic daily updates of each field’s N status.

**Why Use Adapt-N?**

Economic optimum N rates in corn are highly influenced by weather, especially early-season rainfall – the difference from one year to the next could easily be 100 lbs of N. This uncertainty reduces farm profits and causes potentially high environmental losses via nitrate leaching and denitrification.

**What Can Adapt-N Do?**

The well-calibrated computer model at the core of Adapt-N combines management and soil information, and high resolution weather information available for your farm, to dynamically adjust N recommendations for each management unit.

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**Adapt-N Increased Grower Profits**

Proportion of 2011 trials by crop showing profit gains (green, average of $35/ac in 2011, 86% of trials) or losses (gray) as a result of using the Adapt-N recommendation compared to current grower N management. Profit calculations assume $5.50/bu grain, $50/T silage, and $0.60/lb N.

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**What factors does Adapt-N account for in making a recommendation?**

- High resolution (5x5 km grid) daily precipitation & temperature data
- Soils: texture/soil type, slope, rooting depth, % organic matter
- N fertilizer applications: rate, type, timing, placement
- Cultivar: Silage, grain, or sweet corn; planting date, maturity class, expected harvest population and yield
- Tillage: fall or spring plowing, or conservation tillage/residue management
- Manure applications: date, rate, N analysis, incorporation info
- Rotations: soy, corn - silage or grain, or sod - last 3 yrs, % legume, surface killed or incorporated
- Irrigation
- Fertilizer and grain prices

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**Get an Adapt-N Account:** For a free 2012 Adapt-N account, please contact Jeff Melkonian (jjm11@cornell.edu).

**For More Information:** Visit http://adapt-n.cals.cornell.edu for information about adaptive N management, webinars and other training materials to get started using Adapt-N effectively.

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